UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/788,281	02/16/2001	Bryan D. Skene	50002.02US11	5298

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EXAMINER
SHINGLES, KRISTIE D

ART UNIT	PAPER NUMBER
2141	

DATE MAILED: 05/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/788,281	SKENE ET AL.
	Examiner	Art Unit	
	Kristie Shingles	2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>24 January 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>2-5,8,9,17-26,29,33-41 and 45-49</u> is/are pending in the application.

    4a) Of the above claim(s) <u>1,6,7,10-16,27,28,30-32 and 42-44</u> is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>2-5,8,9,17-26,29,33-41 and 45-49</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>16 February 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant has amended claims 3, 9, 17, 18, 26, 29, 33 and 34.

Claims 1, 6, 7, 10-16, 27, 28, 30-32 and 42-44 are canceled.

Claim 49 has been added.

Claims 2-5, 8, 9, 17-26, 29, 33-41 and 45-49 are pending.

Claim Objections

1.   Per claim **3**, the proposed claim language correction filed on 1/24/2005 has been accepted

by the Examiner. Correction of the claim language will not be held in abeyance.

Response to Arguments

2.   Applicant's arguments, see Remarks pages 11-14, filed 1/24/2005, with respect to the

rejection(s)of claim(s) 2-48 have been considered and are persuasive. Therefore, the rejection

has been withdrawn. However, upon further consideration, a new ground of rejection is made in

view of *Lim* (USPN 6,360,256) and *Jindal et al* (USPN 6,092,178).

Claim Objections

3.   Claims 2-5, 22 and 38 are objected to because of the following informalities: "ip" should

be replaced with "IP". Appropriate correction is required for all instances of the informality.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter, which the applicant regards as his invention.

5.   Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing

to particularly point out and distinctly claim the subject matter which applicant regards as the

invention. Claim 2 recites the limitations: "the plurality of servers" in lines 9-11, "the server" in

line 10 and "the selected server" in lines 12-13 of the claim. There is insufficient antecedent

basis and no prior recitation for these limitations in the claim language.

Claim Rejections - 35 USC § 101

6.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
> any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
> requirements of this title.

7.   **Claims 38-41 and 45-48** are rejected under 35 U.S.C. 101 because the claimed invention

is directed to non-statutory subject matter. Independent claim 38 is directed towards a

"modulated data signal embodied in a carrier wave and representing computer executable

instructions..." which fails to qualify as statutory subject matter unless implemented on a

computer-readable medium. Therefore the dependent claims 39-41 and 45-48 are rejected under

the same rationale.

In order to expedite a comprehensive examination of the instant application, the claims rejected under 35 U.S.C. 101
(non-statutory) above, are further rejected as set forth below in anticipation of applicant amending these claims to
place them within the admissible statutory categories of invention.

Claim Rejections - 35 USC § 102

8.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9.   Claims **2-5, 22-24, 39, 40 and 49** are rejected under 35 U.S.C. 102(e) as being

anticipated by *Lim* (USPN 6,360,256).

    a.   **Per claim 2,** *Lim* teaches a method of bridging disparate content delivery

networks (CDNs) across a plurality of zones within a network, comprising:

- receiving a request from a client located within one of the plurality of zones for access to resources associated with a domain name (Figure 1, col.3 line 52-col.4 line 47 and col. 7 line 40-col.8 line 5; client communicates with server within a zone to access resources associated with a domain name);

- determining network conditions for the network based on a determination of the load for each of the plurality of zones (col.2 line 26-col.3 line 5, col.4 lines 48-67, col.5 lines 15-54 and col.7 line 17-col.8 line 5; determinations based on various methods of load measurement for each zone);

- distributing the request to one of the plurality of zones based on the determined network conditions (col.1 line 52-col.2 line 15, col.2 line 26-col.3 line 5, col.4 lines 39-67, col.7 lines 17-40 and col.8 lines 43-51; the client's request is distributed to an appropriate server in one of the zones able to handle the load determined by load measurements);

- selecting one of the plurality of servers within the zone in which the request was distributed, the selection of the server being based on a determination for optimally balancing the load across the plurality of servers (col.1 line 52-col.2 line 15, col.2 line 26-col.3 line 5, col.4 lines 39-67, col.7 lines 17-40 and col.8

lines 43-51; the client's request is distributed to an appropriate server in one of the zones able to handle the load determined by load measurements); and

- resolving an Internet protocol (IP) address of the selected server so that the accessing of resources associated with the domain name at the resolved IP address of the selected server will bridge CDNS (col.4 lines 38-67 and col.5 lines 21-66; provision for resolving of the domain name and associated host address).

b.   **Claims 22 and 49** contain limitations that are substantially similar to claim 2 and are therefore rejected under the same basis.

c.   **Per claim 3,** *Lim* teaches the method of claim 2, further comprising querying a local Domain Name System (DNS) to provide the IP address associated with the domain name (col.4 lines 1-67).

d.   **Per claim 4,** *Lim* teaches the method of claim 3 wherein when the IP address is not present at the local DNS, querying a primary DNS to resolve the IP address associated with the domain name (col.4 lines 1-67).

e.   **Per claim 5,** *Lim* teaches method of claim 4, wherein when the primary DNS determines the domain name is delegated to a EDNS, further comprises referring the local DNS to the EDNS to resolve the IP address for the selected server, the EDNS employs at least one of a plurality of load balancing determinations to select one of the plurality of servers and resolve the IP address for the selected server (col.4 lines 1-67 and col.7 line 64-col.8 line 10).

f.   **Per claim 23,** *Lim* teaches the system of claim 22, wherein selecting one of the plurality of servers, further comprises choosing the server based on one of a plurality of static load balancing determinations for each server, the plurality of static load balancing determinations being selectable and including random, round robin, static ratio, global availability and topology (col.2 line 45-61, col.4 lines 56-61, col.6 line 22-col.7 line 40 and col.7 line 55-col.8 line 5).

g.   **Claim 39** is substantially similar to claim 23 and is therefore rejected under the same basis.

h.   **Per claim 24,** *Lim* teaches the system claim 22 wherein selecting one of the plurality of servers, further comprises choosing the server based on one of a plurality of dynamic load balancing determinations for each server, the dynamic load balancing determinations being selectable and including completion rate, least connections, packet rate, hops, round trip times, new correction rate, kilobyte rate, quality of service and dynamic ratio (col.2 line 26-61, col.4 lines 56-61, col.6 line 3-col.7 line 40 and col.7 line 55-col.8 line 5).

i.   **Claim 40** is substantially similar to claim 24 and is therefore rejected under the same basis.

Claim Rejections - 35 USC § 103

10.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11.   Claims **8,9 17-21, 25, 26, 29, 33—38, 41 and 45-48** are rejected under 35 U.S.C. 103(a)

as being unpatentable over *Lim* (USPN 6,360,256) in view of *Jindal et al* (USPN 6,092,178).

        a.   **Per claim 8,** *Lim* teaches the method of claim 5 as applied above, yet fails to

explicitly teach the plurality of server further comprising: marking each of a plurality of pools to

a not tried state; determining a pool load-balancing setting; selecting one of the plurality of pools

that is marked to the initialization state; marking the selected one of the plurality of pools to a

tried state; attempting to obtain an answer using the determined pool load-balancing on the

selected one of the plurality of pools; and determining if the answer was obtained. However,

Jindal et al disclose load balancing in a server farm wherein local and global policies may be

exercised to select the preferred group of segregated servers for handling a task (col.7 line 1-

col.8 line 63, col.9 lines 41-57 and col.10 line 45-col.11 line 34).

        It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teachings of *Lim* and *Jindal et al* for the purpose of

performing load balancing across a pool of servers to determine which servers are functional for

handling particular loads and thus selecting a pool of servers to perform the task. This capability

extends load-balancing features to selective groups of servers/devices as opposed to just one

server/device.

        b.   **Claims 19, 25, 35 and 46** are substantially similar to claim 8 and are therefore

rejected under the same basis.

        c.   **Per claim 17,** *Lim* teaches the method of claim 2 as applied above, yet fails to

explicitly teach the method of claim 2 further comprising: deriving cost metrics for network

paths in topological maps; using the cost metrics to determine a geographic location of the

request: and distributing the request based on the geographic location. However, *Jindal et al*

teaches implementing a load-balancing policy, which requires choosing the closest server and

determining a server's distance from the DNS server based on fewest network hops or

geographic location (col.3 lines 5-67, col.5 lines 48-57, col.6 lines 33-59, col.8 lines 39-63 and

col.9 lines 4-22).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teachings of *Lim* and *Jindal et al* for the purpose of

performing load balancing based on the information collected from each server and the

parameters required by the different policies, wherein in a parameter may include the

geographical location and/or distance of the server to determine its selectability; because location

impacts the efficiency and convenience of the server to handle requests.

   d.   **Claims 18, 29, 33, 34, 38, 41 and 45** are substantially similar to claim 17 and are

therefore rejected under the same basis.

   e.   **Per claim 20,** *Lim* teaches the method of claim 2 as applied above, yet fails to

explicitly teach the method further wherein a least a portion of the plurality of servers are virtual

server. However, *Jindal et al* disclose the inclusion virtual servers into the load-balancing system

(col.3 lines 20-54 and col.5 lines 19-67).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teachings of *Lim* and *Jindal et al* for the purpose of

implementing virtual servers into the load-balancing system to extend the functionality to include

other types of servers; in this case load-balancing of virtual or Web servers would be obvious

since they share computer resources with other servers and would require some form of regulation or load distribution.

    f.   **Claims 36 and 47** are substantially similar to claim 20 and are therefore rejected under the same basis.

    g.   **Per claim 21,** *Jindal et al* teaches the method of claim 20 wherein selecting one of the plurality of servers within the zone in which the request was distributed, the selection of the server being based on a determination for optimally balancing the load across the plurality of servers, further comprising: determining if the selected server is a virtual server, and if so: determining a number of nodes up on the virtual server; determining if the number of nodes up or the number of connections for the virtual server exceeds a predetermined number and if so returning a value indicating the capacity of the virtual server has been exceeded (col.3 lines 19-58, col.5 line 19-col.6 line 67, col.7 lines 1-43 and col.8 line 30-col.9 line 57).

    h.   **Claims 9, 26, 37 and 48** are substantially similar to claim 21 and are therefore rejected under the same basis.

Conclusion

12.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: *Jindal et al* (USPN 6,324,580), *Brendel et al* (USPN 5,774,660), *Johnson et al* (USPN 6,205,477), *Takahashi et al* (USPN 6,574,229), *Choquier et al* (USPN 5,774,668), *Joffe et al* (USPN 6,185,619), *Ervin et al* (USPN 6,438,133) and *Karger et al* (USPN 6,553,420).

13.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristie Shingles whose telephone number is 571-272-3888. The examiner can normally be reached on Monday-Friday 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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SUPERVISORY PATENT EXAMINER